## Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A system for manipulating a polarizable object using dielectrophoresis, comprising:

a first elongated cylindrically shaped nanoelectrode electrically coupled with a first time-varying voltage source; and

a second elongated nanoelectrode electrically coupled with a second voltage source, wherein the first and second voltage sources are configured to generate a time-varying electric field between the two nanoelectrodes, and wherein the nanoelectrodes are positioned to allow the dielectrophoretic manipulation of a polarizable object within the electric field.

2. (Original) The system of claim 1, wherein the nanoelectrodes each have a first and second end, the first end of the first nanoelectrode being electrically coupled with the first voltage source and the first end of the second nanoelectrode being electrically coupled with the second voltage source.

3. (Original) The system of claim 2, wherein the first and second nanoelectrodes are positioned such that the first and second nanoelectrodes extend from the first end to the second end at least partially towards each

other, and wherein the second end of the first nanoelectrode is separated from the second end of the second nanoelectrode by a first gap.

4. (Original) The system of claim 3, wherein each nanoelectrode is aligned along substantially the same center axis.

5. (Original) The system of claim 3, wherein the gap is approximately one nanometer or greater.

6. (Cancelled)

7. (Original) The system of claim 6, wherein the cylindrically shaped nanoelectrode is a nanotube.

8. (Original) The system of claim 7, wherein the nanotube is a carbon nanotube.

9. (Original) The system of claim 8, wherein the carbon nanotube is single-walled.

10. (Original) The system of claim 8, wherein the carbon nanotube is multi-walled.

11. (Original) The system of claim 1, wherein at least one nanoelectrode is capacitively coupled with the respective voltage source.

12. (Original) The system of claim 1, wherein at least one nanoelectrode is electrically coupled with the respective voltage source at a metal electrode.

13. (Original) The system of claim 3, further comprising:

a third nanoelectrode having a first and a second end, the first end electrically coupled with a third voltage source; and

a fourth nanoelectrode having a first and a second end, the first end electrically coupled with a fourth voltage source, wherein the second, third and fourth voltage sources are time-varying and wherein each of the nanoelectrodes are arranged radially such that each nanoelectrode extends from the first end to the second end at least partially towards the other nanoelectrodes, the second end of the each of the nanoelectrodes being spaced apart from the others to define a common center region.

14. (Original) The system of claim 13, wherein the first and second nanoelectrodes are aligned along substantially the same first center axis and wherein the third and fourth nanoelectrodes are aligned along substantially the same second center axis transverse to the first center axis.

15. (Original) The system of claim 13, wherein a polarizable object is located in the common center region.

16. (Original) The system of claim 15, wherein the polarizable object is configured to function as a rotor.

17. (Original) The system of claim 16, wherein each voltage source is configured to operate at a separate phase to rotate the rotor in a radial direction within the common center region, the phase of each voltage source successively lagging the preceding source in the radial direction.

18. (Original) The system of claim 3, wherein the polarizable object is a molecular transistor coupled between the second end of the first nanoelectrode and the second end of the second nanoelectrode.

19. (Original) The system of claim 1, wherein the nanoelectrodes and polarized object are suspended in a solution.

20. (Currently amended) A method of dielectrophoretically manipulating a polarizable object with elongated nanoelectrodes, comprising:

positioning a polarizable object in proximity with a first and a second elongated nanoelectrode<u>, wherein said first elongated nanoelectrode is cylindrically shaped</u>; and

applying a time-varying electric field between the first and second nanoelectrodes, the field being sufficient to manipulate the polarizable object.

21. (Original) The method of claim 20, further comprising manipulating the polarizable object into a gap between the first and second nanoelectrodes.

22. (Original) The method of claim 21, further comprising trapping the object between the nanoelectrodes.

23. (Original) The method of claim 20, wherein the first nanoelectrode extends from a first end electrically coupled with a first time-varying voltage source to a second end and the second nanoelectrode extends from a first end electrically coupled with a second voltage source to a second end in a direction at least partially towards the first nanoelectrode.

24. (Cancelled)

25. (Original) The method of claim 24, wherein the cylindrically shaped nanoelectrode is a carbon nanotube.

26. (Original) The method of claim 23, wherein the first end of at least one of the nanoelectrodes is capacitively coupled with the respective voltage source.

27. (Original) The method of claim 22, further comprising coupling the object between the second ends of the first and second nanoelectrodes.

28. (Original) The method of claim 27, wherein the object is a nano-scale circuit device.

29. (Original) The method of claim 27, wherein the object is a strand of deoxyribonucleic acid (DNA).

30. (Original) The method of claim 27, wherein the object is a peptide nucleic acid (PNA).

31. (Original) The method of claim 27, wherein the nanoelectrodes are carbon nanotubes.

32. (Original) The method of claim 31, further comprising forming a plurality of carboxyl groups at each of the second ends of the carbon nanotubes.

33. (Original) The method of claim 32, further comprising chemically reacting a polarizable object with the carboxyl groups at each second end of the carbon nanotubes.

34 – 56 (Cancelled)

<u>57</u>~~33~~. The method of claim 30, further comprising coupling a strand of deoxyribonucleic acid (DNA) into proximity with the PNA, wherein the DNA is complementary to the PNA to form a DNA-PNA duplex.